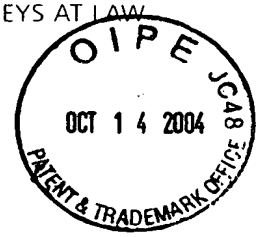
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June 27, 2003

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Art Unit 2827

Re: U.S. Utility Patent Application
Appl. No. 09/997,272; Filed: November 30, 2001
For: **Thermally and Electrically Enhanced Ball Grid Array Packaging**
Inventors: Zhao *et al.*
Our Ref: 1875.2200001

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Second Supplemental Information Disclosure Statement;

2. Form PTO-1449 citing documents (4 sheets);

3. Copies of the cited documents on Form PTO-1449 (AA1-AF1, AL1-AP1, AL2, AR1-AR4, AS1-AS4, AT1-AT3); and

4. Return postcard.

It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

Jeffrey S. Weaver
Attorney for Applicants
Registration No. 45,608

JSW/asl
Enclosures

SKGF_DC1:150267.1

OIPE
OCT 14 2004
JC48
PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:
Zhao *et al.*
Appl. No. 09/997,272
Filed: November 30, 2001
For: **Thermally and Electrically Enhanced Ball Grid Array Packaging**

Confirmation No. 2600
Art Unit: 2827
Examiner: Cruz, Lourdes C.
Atty. Docket: 1875.2200001

Second Supplemental Information Disclosure Statement

Commissioner for Patents
Washington, D.C. 20231

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98.

Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

This statement should not be construed as a representation that a search has been made, or that information more material to the examination of the present patent application

does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

☐ 1. Statement under 37 C.F.R. 1.704(d). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.

■ 2. Filing under 37 C.F.R. § 1.97((b). This Information Disclosure Statement is being filed within three months of the date of filing of a national application other than a continued prosecution application (CPA), OR within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application, OR before the mailing date of a first Office Action on the merits OR before the mailing of a first Office Action after the filing of a request for continued examination under 37 C.F.R. § 1.114. No statement or fee is required.

☐ 3. Filing under 37 C.F.R. § 1.97(c). This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection, or Notice of Allowance, or an action that otherwise closes prosecution in the application.

☐ a. Statement under 37 C.F.R. § 1,97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).

□ b. Statement under 37 C.F.R. § 1,97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).

□ c. Attached is our Check No. _____ in the amount of $ 180.00 in payment of the fee under 37 C.F.R. § 1.17(p).

□ 4. Filing under 37 C.F.R. § 1.97(d) This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Enclosed find our Check No. _____ in the amount of $ _____ in payment of the fee under 37 C.F.R. § 1.17(p); in addition:

□ a. Statement under 37 C.F.R. § 1,97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).

□ b. Statement under 37 C.F.R. § 1,97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).

■ 5. Document AF1 was cited in an office action by a foreign patent office in a counterpart foreign application. Submission of an English language version of the office action (Document AS4) that indicates the degree of relevance found by the foreign office is provided in satisfaction of the requirement for

a concise explanation of relevance. 1138 OG 37, 38. A copy of the office action is enclosed as document AS4 on the attached PTO-1449 Form.

■ 6. A concise explanation of the relevance of the non-English language documents appears below:

Document AL1 (JP 10-189835) appears to describe a laminated semiconductor package for memory element. A copy of the English language abstract of document AL1 is enclosed as document AR1.

Document AM1 (JP 10-247703) appears to describe a ball grid array package and printed board. A copy of the English language abstract of document AM1 is enclosed as document AS1.

Document AN1 (JP 2000-286294) appears to describe a semiconductor device and its manufacture. A copy of the English language abstract of document AN1 is enclosed as document AT1.

Document AO1 (JP 10-50877) appears to describe a semiconductor package. A copy of the English language abstract of document AO1 is enclosed as document AS2.

Document AP1 (JP 61-49446) appears to describe a resin seal type semiconductor device. A copy of the English language abstract of document AP1 is enclosed as document AT2.

Document AL2 (JP 2001-68512) appears to describe a tab tape with stiffener and BGA package. A copy of the English language abstract of document AL2 is enclosed as document AR2.

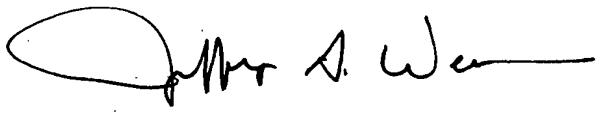
□ 7. Copies of the documents were cited by or submitted to the Office in an IDS that complies with 37 C.F.R. § 1.98(a)-(c) in Application No. _____, filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).

It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Jeffrey S. Weaver
Attorney for Applicants
Registration No. 45,608

Date: 6-27-03

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OIPE JC48
OCT 14 2004
PATENT & TRADEMARK OFFICE

BEST AVAILABLE COPY

Applicant:	Zhao *et al.*	**Art Unit:**	2827
		Examiner:	Cruz, Lourdes C.
Application No.:	09/997,272	**Docket:**	1875.2200001
Filed:	November 30, 2001	**Atty:**	RES/JSW
For:	**Thermally and Electrically Enhanced Ball Grid Array Packaging**		

When receipt stamp is placed hereon, the USPTO acknowledges receipt of the following documents:

1. SKGF Cover letter;
2. Second Supplemental Information Disclosure Statement;
3. Form PTO-1449 citing documents (4 sheets);
4. Copies of the cited documents on Form PTO-1449 (AA1-AF1, AL1-AP1, AL2, AR1-AR4, AS1-AS4, AT1-AT3); and
5. Return postcard.

Please Date Stamp And Return To Our Courier

OIPE JC34
JUN 27 2003
PATENT & TRADEMARK OFFICE

SKGF_DC1:150286.1

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October 14, 2004

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Commissioner for Patents
PO Box 1450
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Mail Stop Issue Fee

Re: Allowed U.S. Utility Patent Application
Appl. No. 09/997,272; Filed: November 30, 2001
For: **Thermally And Electrically Enhanced Ball Grid Array Packaging**
Inventors: Zhao *et al.*
Our Ref: 1875.2200001

Sir:

In response to the **Notice of Allowance and Issue Fee Due** dated July 14, 2004, the following documents are forwarded for appropriate action by the U.S. Patent and Trademark Office:

1. Issue Fee Transmittal (Form PTOL-85B);

2. Fee Transmittal (Form PTO/SB/17);

3. Courtesy copy of SKGF Cover letter dated June 27, 2003;

4. Courtesy copy of Second Supplemental Information Disclosure Statement;

5. Courtesy copy of Form PTO-1449 citing documents (4 sheets);

6. Courtesy copy of the cited documents on Form PTO-1449 (AA1-AF1, AL1-AP1, AL2, AR1-AR4, AS1-AS4, AT1-AT3); and

7. Courtesy copy of postcard date-stamped June 27, 2003;

8. PTO-2038 Credit Card Payment Form for $1,679.00 to cover:

 $1,370.00 Issue Fee;
 $ 9.00 Advance copies of patent; and
 $ 300.00 Publication Fee; and

9. One return postcard.

It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036. If extensions of time under 37 C.F.R. § 1.136 other than those otherwise provided for herewith are required to prevent abandonment of the present patent application, then such extensions of time are hereby petitioned, and any fees therefor are hereby authorized to be charged to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

Jeffrey S. Weaver
Attorney for Applicants
Registration No. 45,608

JSW/NDD/sjc
Enclosures

322229_1.DOC

FORM PTO-1449

SECOND SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

OIPE JC48 OCT 14 2004 PATENT & TRADEMARK OFFICE

ATTY. DOCKET NO. 1875.2200001	APPLICATION NO. 09/997,272
APPLICANT Zhao *et al.*	
FILING DATE November 30, 2001	GROUP 2827

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA1	09/783,034	—	Khan *et al.*	—	—	02/15/2001
	AB1	09/849,537	—	Zhang *et al.*	—	—	05/07/2001
	AC1	09/984,259	—	Zhao *et al.*	—	—	10/29/2001
	AD1	09/742,366	—	Khan *et al.*	—	—	12/22/2000
	AE1	10/020,207	—	Khan *et al.*	—	—	12/18/2001
	AF1	5,844,168	12/1998	Schueller *et al.*			
	AG1						
	AH1						
	AI1						
	AJ1						
	AK1						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL1	10-189835	07/1998	Japan	H01L	23/24	Yes No
	AM1	10-247703	09/1998	Japan	H01L	23/12	Yes No
	AN1	2000-286294	10/2000	Japan	H01L	21/60	Yes No
	AO1	10-50877	02/1998	Japan	H01L	23/12	Yes No
	AP1	61-49446	03/1986	Japan	H01L	23/36	Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	1	English-language Abstract of JP 10-189835, published July 21, 1998, 2 pages (last visited March 14, 2003).
	AS	1	English-language Abstract of JP 10-247703, published September 14, 1998, 1 page.
	AT	1	English-language Abstract of JP 2000-286294, published October 13, 2000, 2 pages (last visited March 14, 2003).

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449 SECOND SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT	ATTY. DOCKET NO. 1875.2200001	APPLICATION NO. 09/997,272
	APPLICANT Zhao *et al.*	
	FILING DATE November 30, 2001	GROUP 2827

OIPE JC48 OCT 14 2004 PATENT & TRADEMARK OFFICE

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA2						
	AB2						
	AC2						
	AD2						
	AE2						
	AF2						
	AG2						
	AH2						
	AI2						
	AJ2						
	AK2						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL2	2001-68512	03/2001	Japan	H01L	21/60	**Yes** No
	AM2						Yes No
	AN2						Yes No
	AO2						Yes No
	AP2						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	2	English-language Abstract of JP 2001-68512, published March 16, 2001, 1 page (last visited October 2, 2002).
	AS	2	English-language Abstract of JP 10-50877, published February 20, 1998, 1 page (last visited October 2, 2002).
	AT	2	English-language Abstract of JP 61-49446, published March 11, 1986, 1 page.

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

OIPE JC48 OCT 14 2004 PATENT & TRADEMARK OFFICE

FORM PTO-1449

SECOND SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NO.	APPLICATION NO.
1875.2200001	09/997,272
APPLICANT: Zhao *et al.*	
FILING DATE: November 30, 2001	GROUP: 2827

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA3						
	AB3						
	AC3						
	AD3						
	AE3						
	AF3						
	AG3						
	AH3						
	AI3						
	AJ3						
	AK3						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL3						Yes No
	AM3						Yes No
	AN3						Yes No
	AO3						Yes No
	AP3						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	3	Kamezos, M. , "An EPBGA Alternative," *Advanced Packaging*, June 1998, pages 90, 92, 94, and 96.
	AS	3	Zhao, Z., Ph.D., "Thermal Design and Modeling of Packages," *IEEE Short Courses*, Broadcom Corporation, October 25, 2000, 95 pages.
	AT	3	Zhao, Z., Ph.D., "IC Package Thermal Issues and Thermal Design," ASAT, Inc., January 15, 2000, 98 pages, presented at 2nd International Icepak User's Group Meeting, Palo Alto, CA, on February 7, 2000.

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449

SECOND SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

OIPE JC48 OCT 14 2004 PATENT & TRADEMARK OFFICE

ATTY. DOCKET NO.	APPLICATION NO.
1875.2200001	09/997,272
APPLICANT: Zhao *et al.*	
FILING DATE: November 30, 2001	GROUP: 2827

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA4						
	AB4						
	AC4						
	AD4						
	AE4						
	AF4						
	AG4						
	AH4						
	AI4						
	AJ4						
	AK4						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL4						Yes No
	AM4						Yes No
	AN4						Yes No
	AO4						Yes No
	AP4						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	4	Schueller, R.D. *et al.*, "Performance and Reliability of a Cavity Down Tape BGA Package," *IEEE Electronic Packaging Technology Conference*, 1997, pages 151-162.
	AS	4	Copy of Notice of Decision of Rejection for Taiwanese Appln. No. 090129878, September 13, 2002, 3 pages.
	AT	4	

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.